Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V (DRAFT) NO. V-05-062
TRIGEN-CINERGY SOLUTIONS OF SILVER GROVE, LLC.
CAMPBELL COUNTY, KY.
JULY 30, 2006
MASSOUD KAYVANJAH, REVIEWER
SOURCE I.D#: 021-037-00091
SOURCE A.I.#: 37590, ACTIVITY#: APE20050002

SOURCE DESCRIPTION:
A renewal application for the existing Title V permit, which expired on October 19, 2005, was received on April 20, 2005. The units are simple-cycle peaking natural gas-fired turbines rated 65 mmBtu/hr input capacity (5MW output) each. One of the four turbines was installed in 2001, while construction authority for the other gas turbines has been extended, based on an approved second extension granted on November 9, 2004, by the Division. The facility is classified as a Title V major source of air pollution based on the potential to emit more than 100 tons per year (tpy) of carbon monoxide (CO), and nitrogen oxides (NO_x). This source is located in Silver Grove, Campbell County, which federally has been classified as non-attainment for $PM_{2.5}$ and 8 hour ozone standards.

APPLICABLE REGULATION:
401 KAR 60:005, incorporating by reference **40 CFR 60, Subpart GG (60.334)**, Standards of Performance for Stationary Gas Turbines, for emissions unit with a heat input at peak load equal to or greater than 10 mmBtu/hour for which construction commenced after October 3, 1977.
40 CFR 60, Subpart KKKK, Standards of Performance for New Stationary Gas Turbines applies to the new gas turbines (unit #2, 3, and 4) that commenced construction after February 18, 2005.
401 KAR 59:005, General provisions, Section 1-2, provision of performance tests for new source according to 401 KAR 50:045.

REGULATION DOES NOT APPLY:
40 CFR 60.334(a), applies to the low NOx burners that use water/steam injection, so it does not apply to unit 01, since it uses lean premix combustion system to control the NOx emissions.

COMMENTS:

REQUIREMENTS APPLICABLE TO TURBINE UNIT # 01:
a) Pursuant to 40 CFR 60.332, nitrogen oxides (NO_x) emission level in the exhaust gas shall not exceed 150 ppm by volume at 15 percent oxygen on a dry basis, based on a three-hour rolling average. The ppm level of nitrogen oxides (at ISO standard conditions) shall be demonstrated by stack test. The permittee will assure continuing compliance with the nitrogen oxide standard by monitoring the nitrogen content of the fuel.

b) Pursuant to 40 CFR 60.333, the permittee shall either not cause to be discharged into the atmosphere any gases which contain sulfur dioxide (SO_2) in excess of 0.015 percent by volume at 15 percent oxygen on a dry basis or not burn any fuel which contains sulfur in excess of 0.8 percent by weight (8000 ppmw). The permittee will assure continuing compliance with the sulfur dioxide standard by monitoring the sulfur content of the fuel.

c) Pursuant to 401 KAR 59:005, Section 3, the owner or operator of the gas turbine shall maintain a file of all measurements, including continuous monitoring system, performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems and devices; and all other information required by 401 KAR 59:005 recorded in a permanent form suitable for inspection.

REQUIREMENTS APPLICABLE TO NEW TURBINE UNITS # 02, 03, AND 04:

Pursuant to 40 CFR 60, Subpart KKKK, nitrogen oxides (NO_x) emission level in the exhaust gas shall not exceed 25 ppm by volume at 15% oxygen, or 150 ng/J of useful output (1.2 lb/MWh), and the sulfur dioxide (SO_2) emission limit shall not exceed 110 ng/J (0.90 lb/MWh) of gross output, or the fuel sulfur content shall not exceed 26 ng SO_2/J (0.060 lb SO_2/mmBtu) heat input.

Pursuant to 40 CFR 60.4415, the permittee shall conduct initial testing of SO2 as required in 40 CFR 60.8, and subsequent testing shall be done annually (no more than 14 calendar months following the initial performance). Initial performance test for NOx shall be done in accordance with the requirements of 40 CFR 60.4400 and/or 40 CFR 60.4405, if the permittee chooses to install NOx diluent CEMS.

Startup, shutdown and malfunction of the units shall be monitored for compliance in accordance with the requirements of 40 CFR 60.4333.

OPERATIONAL FLEXIBILITY: NONE

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.